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Automatic control of industrial apparatus is extensively used in the metallurgical industry, especially on electric furnaces where the resultant economy is most noticeable. Automatic electrode control decreases power consumption by 5%, while complete automatization of a large modern steel-smelting furnace gives even better results.

At one metallurgical plant, tests on a 15-ton arc furnace showed that the power consumed per ton of steel smelted was cut by 11% when manual control was replaced by automatic. At present, about 80% of large electric furnaces (capacity 500 kg and over) have automatic electrode control and there is every reason to suppose that all such furnaces will be similarly equipped in the near future.

Automatic control of electric drives is also widely used in the metallurgical industry. Complex automatization of rolling mills has permitted more compact work processes, increased the utilization factor of the main electric drives, and ensured coordinated operation of the auxiliary mechanisms, while at the same time increasing labor productivity, facilitating uninterrupted operations, improving work conditions, and decreasing electric power consumption. For example, complex automatization of a rolling mill in the Magnitogorsk Metallurgical Combine increased its output by 15% and saved 1,400,000 kw-h of power a year. At the same time, quality of production improved and the percentage output of first-class parts increased.

Mention must also be made of the successful introduction of automatic equipment in the Chusovoy Metallurgical Plant, the Plant imeni Dzerzhinskiy, and other enterprises in collaboration with the "Energometallurgprom" Trust and the Central Automatics Laboratory of the Ministry of the Metallurgical Industry.

However, automatic control and regulation are as yet insufficiently utilized. For example, work on automatizing such heavy-duty units as tube rolling mills and wire-drawing machines is quite inadequate. Special attention should also be paid to further automatization in nonferrous metallurgy, where such work can be very effective, especially in regard to cutting specific power consumption. At machine-building plants, automatization of open-hearth and heat-treatment furnaces is of the greatest importance.

In the further development of automatic control of industrial furnaces, it is necessary to intensify work on using electronic and photoelectronic apparatus.

In the metalworking industry, automatic speed regulation is used to maintain optimum machining conditions at an economical cutting speed. Due to the importance of this industry, the latest achievements in this field must be widely disseminated as soon as possible.

Personnel of the Experimental Scientific Research Institute of Metal Cutting Machines, who are carrying out much work on designing and improving electric drives with thyatron converters and electronic control, should render active assistance to industry in the rapid introduction of new automatic systems, including those for assembly lines.

An outstanding example of automatic control is a Moscow plant designed and built by Soviet specialists. All production at this plant is fully automatic, including casting, machining, and checking and sorting of the end product.

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